

Appl. No. 10/765,825  
Amdt. Dated Jul. 12, 2005  
Reply to Office Action of April 12, 2005

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

Claim 1. (currently amended) A golf club comprising:

an club configuration selected from the group consisting of 1, 2, 3, 4, 5, 6, and 7 wherein club configuration comprises:

a head portion having a toe area and a heel area;

a shaft portion;

a hosel portion connecting said head portion to said shaft portion;

a club face; and

a reduced volume groove configuration positioned on said club face, wherein said groove configuration has lower volume and imparts less backspin on the golf ball when struck during play than a conventional square groove configuration that has sides perpendicular to the club face.

Appl. No. 10/765,825  
Amdt. Dated Jul. 12, 2005  
Reply to Office Action of April 12, 2005

Claim 2. (original) The golf club of claim 1 wherein said reduced volume groove is a V groove configuration having a centerline spacing of about 0.05 to about 0.300 inches between at least one additional V groove configuration.

Claim 3. (original) The golf club of claim 2 wherein said centerline spacing is about  $0.105 \pm 0.05$  inches.

Claim 4. (original) The golf club of claim 2 wherein said V groove configuration has a first surface angle that is about 20 to about 50 degrees from the center of the groove.

Claim 5. (original) The golf club of claim 4 wherein said V groove configuration has a second surface angle that is about 20 to about 50 degrees from the center of the groove.

Claim 6. (original) The golf club of claim 5 wherein said first surface angle and said second surface angle is about 30 to about 40 degrees from the center of the groove and are set to have angles equal to each other.

Appl. No. 10/765,825  
Amdt. Dated Jul. 12, 2005  
Reply to Office Action of April 12, 2005

Claim 7. (original) The golf club of claim 2 wherein said V groove configuration has a second surface angle that is about 20 to about 50 degrees from the center of the groove.

Claim 8. (original) The golf club of claim 2 wherein said V groove configuration has a groove depth of about 0.005 to about 0.04 inches.

Claim 9. (currently amended) The golf club of claim 8 wherein said V groove configuration has a groove depth of about 0.01 to about ~~[[0.03]]~~ 0.04 inches.

Claim 10. (original) The golf club of claim 2 wherein said V groove configuration has a groove width of about 0.01 to about 0.05 inches.

Claim 11. (original) The golf club of claim 9 wherein said groove depth is about 0.02 to about 0.04 inches.

Claim 12. (original) The golf club of claim 2 wherein said V groove configuration has an edge spacing of about 0.05 to about 0.300 inches between at least one additional V groove configuration.

Appl. No. 10/765,825  
Amdt. Dated Jul. 12, 2005  
Reply to Office Action of April 12, 2005

Claim 13. (original) The golf club of claim 12 wherein said edge spacing is about 0.075 to about 0.2 inches between at least one additional V groove configuration.

Claim 14. (original) The golf ball of claim 1 wherein said reduced volume groove configuration is a plurality of center grooves having a groove spacing of about 5 to about 50% greater than grooves placed on an outer portion of said club face.

Claim 15. (original) The golf ball of claim 1 wherein said reduced volume groove configuration is a plurality of center grooves having a concave groove with a center depth of about 5 to about 50% less than grooves placed on an outer portion of said club face.

Claim 16. (original) The golf ball of claim 1 wherein said reduced volume groove configuration is a plurality of center grooves having a groove depth of about 5 to about 50% less than grooves placed on an outer portion of said club face.

Appl. No. 10/765,825  
Amdt. Dated Jul. 12, 2005  
Reply to Office Action of April 12, 2005

Claim 17. (original) The golf ball of claim 1 wherein said reduced volume groove configuration is a plurality of convex grooves having a center groove width of about 5 to about 50% less than grooves placed on an outer portion of said club face.

Claim 18. (original) The golf ball of claim 1 wherein said reduced volume groove configuration is a V groove selected from the group consisting of a plurality of center grooves having a groove depth of about 5 to about 50% less than grooves placed on an outer portion of said club face, a plurality of convex grooves having a center groove width of about 5 to about 50% less than grooves placed on an outer portion of said club face, a plurality of center grooves having a concave groove with a center depth of about 5 to about 50% less than grooves placed on an outer portion of said club face, a plurality of center grooves having a groove spacing of about 5 to about 50% greater than grooves placed on an outer portion of said club face, and a combination thereof.

Appl. No. 10/765,825  
Amdt. Dated Jul. 12, 2005  
Reply to Office Action of April 12, 2005

Claim 19. (currently amended) A golf club comprising:

an club configuration selected from the group  
consisting of 8, 9, pitching wedge, gap wedge and sand  
wedge wherein club configuration comprises:

a head portion having a toe area and a heel area;

a shaft portion;

a hosel portion connecting said head portion to  
said shaft portion;

a club face; and

an increased volume groove configuration, wherein  
said groove configuration imparts greater spin on the  
ball than a conventional square groove having sides  
perpendicular to the club face and reduces flyer  
conditions through prevention of hydroplaning by  
channeling moisture from between the club face and the  
ball.

Claim 20. (original) The golf club of claim 19 wherein said  
increased volume grove configuration is a U groove having a  
groove bottom that is a substantially planar surface.

Claim 21. (original) The golf club of claim 20 wherein said  
substantially planar surface is parallel to the club face.

Appl. No. 10/765,825  
Amdt. Dated Jul. 12, 2005  
Reply to Office Action of April 12, 2005

Claim 22. (original) The golf club of claim 19 wherein said increased volume groove configuration is a U groove configuration that has a centerline spacing of about 0.05 to about 0.300 inches between at least one additional U groove configuration.

Claim 23. (original) The golf club of claim 22 wherein said centerline spacing is about  $0.105 \pm 0.05$  inches.

Claim 24. (original) The golf club of claim 22 wherein said U groove configuration has a first surface angle that is about 5 to about 25 degrees relative to an imaginary surface 90 degree to the club surface.

Claim 25. (original) The golf club of claim 24 wherein said U groove configuration has a second surface angle that is about 5 to about 25 degrees relative to an imaginary surface 90 degree to the club surface.

Appl. No. 10/765,825  
Amdt. Dated Jul. 12, 2005  
Reply to Office Action of April 12, 2005

Claim 26. (currently amended) The golf club of claim 22 wherein said U groove configuration has a first surface angle and ~~said~~ a second surface angle that are about 18 to about 22 degrees relative to an imaginary surface 90 degrees to the club surface, and are set to have angles equal to each other.

Claim 27. (original) The golf club of claim 22 wherein said U groove configuration has a second surface angle that is about 5 to about 25 degrees relative to an imaginary surface 90 degree to the club surface.

Claim 28. (original) The golf club of claim 22 wherein said U groove configuration has a groove depth of about 0.005 to about 0.04 inches.

Claim 29. (original) The golf club of claim 22 wherein said groove depth is about 0.01 to about 0.03 inches.

Claim 30. (original) The golf club of claim 22 wherein said U groove configuration has a groove width of about 0.01 to about 0.05 inches.



Appl. No. 10/765,825  
Amdt. Dated Jul. 12, 2005  
Reply to Office Action of April 12, 2005

Claim 31. (original) The golf club of claim 23 wherein said groove depth is about 0.02 to about 0.04 inches.

Claim 32. (original) The golf club of claim 22 wherein said U groove configuration has an edge spacing of about 0.05 to about 0.300 inches between at least one additional U groove configuration.

Claim 33. (currently amended) The golf club of claim 26 wherein said U groove configuration has an edge spacing that is about 0.075 to about 0.2 inches between at least one additional U groove configuration.

Claim 34. (original) The golf ball of claim 19 wherein said increased volume groove configuration is a plurality of center grooves having a groove spacing of about 5 to about 50% less than grooves placed on an outer portion of said club face.

Appl. No. 10/765,825  
Amdt. Dated Jul. 12, 2005  
Reply to Office Action of April 12, 2005

Claim 35. (original) The golf ball of claim 19 wherein said increased volume groove configuration is a plurality of center grooves having a concave groove with a center depth of about 5 to about 50% more than grooves placed on an outer portion of said club face.

Claim 36. (original) The golf ball of claim 19 wherein said increased volume groove configuration is a plurality of center grooves having a groove depth of about 5 to about 50% more than grooves placed on an outer portion of said club face.

Claim 37. (original) The golf ball of claim [[1]] 19 wherein said increased volume groove configuration is a plurality of convex grooves having a center groove width of about 5 to about 50% more than grooves placed on an outer portion of said club face.

Claim 38. (currently amended) A golf club set comprising:  
a first club configuration wherein at least one club selected from the group consisting of clubs 1, 2, 3, 4, 5, 6, and 7 wherein selected first club configuration comprises:

Appl. No. 10/765,825  
Amdt. Dated Jul. 12, 2005  
Reply to Office Action of April 12, 2005

a head portion having a toe area and a heel area;

a shaft portion;

a hosel portion connecting said head portion to said shaft portion;

a club face;

a reduced volume groove configuration on said club face, wherein said groove configuration imparts less backspin on the ball than a conventional square groove having sides perpendicular to the club face; and,

a second club configuration selected from the group consisting of 8, 9, pitching wedge, gap wedge and sand wedge wherein selected second club configuration comprises:

a head portion having a toe area and a heel area;

a shaft portion;

a hosel portion connecting said head portion to said shaft portion;

a club face; and

an increased volume groove configuration wherein said groove configuration imparts greater spin on the ball

Appl. No. 10/765,825  
Amdt. Dated Jul. 12, 2005  
Reply to Office Action of April 12, 2005

than a conventional square groove having sides perpendicular to the club face and reduces flyer conditions through prevention of hydroplaning by channeling moisture from between the club face and the ball.

Claim 39. (currently amended) The golf club set of claim [[28]] 38 wherein club 1, 2, 3, 4, 5, 6, and 7 all contain said decreased volume grooves.

Claim 40. (original) The golf ball of claim 39 wherein said decreased volume grooves are selected from the group consisting of a plurality of V grooves, a plurality of center grooves having a groove depth of about 5 to about 50% less than grooves placed on an outer portion of said club face, a plurality of concave grooves having a center groove width of about 5 to about 50% less than grooves placed on an outer portion of said club face, a plurality of center grooves having a concave groove depth with a center depth of about 5 to about 50% less than grooves placed on an outer portion of said club face, a plurality of center grooves having a groove spacing of about 5 to

Appl. No. 10/765,825  
Amdt. Dated Jul. 12, 2005  
Reply to Office Action of April 12, 2005

about 50% greater than grooves placed on an outer portion of said club face, and a combination thereof.

Claim 41. (original) The golf ball of claim 39 wherein said increased volume grooves are selected from the group consisting of a plurality of U grooves, a plurality of center grooves having a groove depth of about 5 to about 50% greater than grooves placed on an outer portion of said club face, a plurality of convex grooves having a center groove width of about 5 to about 50% greater than grooves placed on an outer portion of said club face, a plurality of center grooves having a concave groove depth with a center depth of about 5 to about 50% more than grooves placed on an outer portion of said club face, a plurality of center grooves having a groove spacing of about 5 to about 50% less than grooves placed on an outer portion of said club face, and a combination of configurations thereof.

Claim 42. (original) The golf club set of claim 38 wherein clubs 8, 9, pitching wedge, gap wedge and sand wedge all contain said increased volume grooves.

Appl. No. 10/765,825  
Amdt. Dated Jul. 12, 2005  
Reply to Office Action of April 12, 2005

Claim 43. (original) The golf club set of claim 42 wherein  
said increased volume grooves are U grooves.